

REMARKS

Claims 1, 2, 4-10 and 12-18 are pending in this application. By this Amendment, claims 1, 2, 4-10 and 12-18 are amended, and claims 3 and 11 are canceled without prejudice to or disclaimer of the subject matter recited in those claims. No new matter is added. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

The courtesies extended to Applicants' representative by Examiner Tucker at the interview held on April 11, 2007, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below and constitute Applicants' record of the interview. The claims are amended to comply with the Examiner's helpful suggestions made during the interview.

I. Rejections Under 35 U.S.C. §101

The Office Action rejects claims 1-18 under 35 U.S.C. §101 as directed to non-statutory subject matter. The §101 rejection of claims 3 and 11 is moot. Applicants respectfully traverse the rejection of claims 1, 2, 4-10 and 12-18.

Applicants amend independent claims 1, 9 and 15 to clarify that the claimed methods and system are directed to an input image defined by a plurality of pixels and a resulting binary output image. Applicants respectfully submit that the "resulting binary image output image" provides a useful, concrete and tangible result. For at least this reason, Applicants respectfully submit that the §101 rejection should be withdrawn.

II. Rejection Under 35 U.S.C. §112, Second Paragraph

The Office Action rejects claim 9 under 35 U.S.C. §112, first paragraph, and claims 1-18 under 35 U.S.C. §112, second paragraph. The §112 rejection of claims 3 and 11 is moot. Applicants respectfully traverse the rejections of claims 1, 2, 4-10 and 12-18.

As discussed in the personal interview, Applicants have amended the claims for clarity, including adding method steps to independent claims 1 and 15, deleting means recitations in claim 9, and clarifying "neighborhood test," "center pixel," "templates," and "orientations of the templates." For at least these reasons, the rejection should be withdrawn.

III. Rejection Under 35 U.S.C. §102(b)

The Office Action rejects claims 1-4, 9-11 and 15 under 35 U.S.C. §102(b) over Suzuki (U.S. Patent No. 5,859,921). The §102 rejection of claims 3 and 11 is moot.

Applicants respectfully traverse the rejection of claims 1, 2, 4, 9, 10 and 15.

Suzuki fails to disclose or suggest a method or a system for thinning or eroding a gray image of an input image as recited in independent claims 1, 9 and 15, including conducting a test of a neighborhood of the plurality of pixels and subtracting a fixed value from the gray image of the center pixel based on a neighborhood of the plurality of pixels.

Suzuki discloses, for example at col. 4, lines 43-65, gray level conversion methods that redefine the minimum and maximum signal levels within predetermined ranges to ensure that characteristic features of a face can be properly extracted from an image of a face. However, Suzuki fails to disclose or suggest a method or a system for thinning or eroding a gray image of an input image as recited in independent claims 1, 9 and 15, including conducting a test of a neighborhood of the plurality of pixels and subtracting a fixed value from the gray image of the center pixel based on a neighborhood of the plurality of pixels. Thus, claims 1, 9 and 15 are patentable over Suzuki. For at least this reason, the rejection of independent claims 1, 9 and 15 under 35 U.S.C. §102(b) over Suzuki, along with dependent claims 2, 4 and 10, should be withdrawn.

IV. Rejections Under 35 U.S.C. §103(a)

The Office Action rejects dependent claims 5-8, 12-14 and 16-18 under 35 U.S.C. §103(a) over Suzuki in view of Iverson et al. (U.S. Patent No. 4,949,390) (Iverson). Applicants respectfully traverse the rejection. Claims 5-8, 12-14 and 16-18 are allowable based on the dependency of each of these claims independent claim 1, 9 or 15.

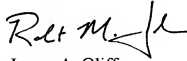
Moreover, Iverson fails to overcome the deficiencies of Suzuki. Iverson teaches a method of eliminating all information from certain pixels of an image based on comparing a set of B-join and T-join templates to the image simultaneously. Suzuki and Iverson, alone or in combination, do not disclose or suggest the claimed method or system for thinning or eroding a gray image of an input image defined by a plurality of pixels that preserves topological features when the gray image is binarized, as recited in independent claims 1, 9 and 15. Thus, claims 5-8, 12-14 and 16-18 are patentable over the combination of Suzuki and Iverson. Therefore, it is respectfully requested that the rejection be withdrawn.

V. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2, 4-10 and 12-18 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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